Energy Policy Update

Energy and Environmental News

July 29, 2013

This newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international and domestic energy and environment-related publications reviewed by the Education and Community Outreach personnel. For inquiries, call (602) 771-1143 or toll free (800) 352-5499. Compiled and edited by Gloria Castro, Special Projects Coordinator. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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ARIZONA

$28 Million Dollars Available for Arizona School Districts Interested in Energy Efficiency; NEF Cyberlearning Announces $2 Million Initiative for Any Arizona School

There is $28 million dollars available for Arizona schools for facilities renovation and energy efficiency projects. These are federal QZAB dollars are available to school districts that are looking for funds for rehabilitating or repairing their facilities.

[PR Web, July 12] There is $28 million dollars available for Arizona schools for facilities renovations and energy efficiency projects. These are federal QZAB dollars available to school districts who are looking for funds for rehabilitating or repairing their facilities. These funds can also assist in the purchase of equipment, instructional materials and providing teacher/administrative personnel professional development. The Arizona Department of Education has $28 million allocated for the statewide QZAB program. National Education Foundation (NEF), the national non-profit leader in assisting schools to find Federal funds, announced today a nationwide initiative to award matching grants of up to $2,000,000 each to any Arizona school district with at least 35% of students on free or reduced cost lunch. NEF grants focus on helping schools get needed funds and bridging the academic divides through effective STEM (Science, Technology, Engineering, and Math) education solutions. Dr. Appu Kuttan, Chairman of the National Education Foundation (NEF), global expert in digital education and empowerment, and the recent University of Wisconsin Distinguished Achievement Award winner, states, "School districts across the Nation are faced with serious budget cuts at a time US rankings in math, reading and science are still going down. Twenty four countries are ranked ahead of US in

math. Our $100 million grant program would provide school districts the required 10% match, and thus enable them to receive $1 billion in Federal QZAB funds (http://www.qzab.org) for energy efficiency, renovation, technology, teacher training and STEM academies. Moreover, schools located in low income communities could receive additional Federal cash grants." In addition to the 10% match grant, NEF helps the school districts to create QZAB STEM+ academies capable of advancing a student one grade level in a subject in 20-30 learning hours in the NEF system, as documented by the State University of NY (SUNY), which implements the academies nationally with a grant from NEF.

Arizona No. 1 for Solar in New Report of Industry's Best States

[Phoenix Business Journal, July 23] Arizona got the best grade of 12 states advocating solar, pulling in the top spot in a review of the nation's solar policies. The report, "Lighting the Way: What we can learn from America's top 12 solar states," was an examination of what was behind the states that are installing the most solar power. Data pulled from the Solar Energy Industries Association show Arizona ranks first in terms of the total amount of solar power per capita and installed solar per capita in 2012. That means the state has 167 watts of solar power for every person in the state overall, and installed 108 watts per person last year.

APS Wants to End Subsidies for Rooftop Solar

[Energy Prospects West, July 23] Arizona Public Service is seeking approval to charge residential customers with solar-photovoltaic installations anywhere from $65 to $143 more a month by levying a demand charge or lowering the net-metering credit. APS based its proposal on an analysis showing that non-solar customers are subsidizing the rates of residential customers with solar panels. Solar advocates rejected APS' analysis and argued that the utility is trying to kill the state's rooftop solar-power industry, a competitor in the electric-power market. APS submitted its demand charge application to the Arizona Corporation Commission on July 12

Energy Code Compromise Reached

[Az Daily Sun, July 17] The Flagstaff City Council approved the first reading of the 2009 energy code with amendments Tuesday night. That result was not, however, as simple as it may appear, and it left everyone disappointed to some degree. The public comment period was very much like a good high school debate, with both sides making points that were equally valid and difficult to refute. For instances, a newer energy code could add roughly $2,000 to an average home's cost, which in the long run doesn't appear like a lot money, especially when looking at the energy savings the newer code is estimated to yield. But if that $2,000 increase prevents a first-time homebuyer from qualifying for a mortgage to buy a home, well then it is a lot of money. Depending on the perspective and time frame taken, a reasonable person could agree with practically every argument, for and against updating the energy code, that was offered Tuesday night. And councilmembers themselves were split nearly evenly between sticking with the status quo, the 2006 energy code, or adopting the 2012 energy code, which made is very difficult for either side to find the votes to move forward. Although, several council members said they were disappointed by last night's decision, in the next breath, they said they were happy that their worse-case scenario failed to move forward.

First Solar Adds New Power Plant to New Mexico Portfolio

[Phoenix Business Journal, June 26] First Solar Inc. is putting in three new solar power plants totaling 23 megawatts in New Mexico as part of a new deal with a utility there. The deal with Public Service Co. of New Mexico would have Tempe-based First Solar develop and build the power plants. Financial terms of the deal were not disclosed. "PNM and the state of New Mexico continue to make great strides in meeting their renewable energy goals, and First Solar is excited to play a significant role in that effort," said Dana Diller, First Solar's vice president of U.S. business development. It's not the first time First Solar has worked with PNM. Last year the manufacturer signed a deal with the utility to build four power plants totaling about 20 megawatts of power. That deal gave PNM a chance to add another 22 megawatts of solar.

Historic Agreement Reached for Navajo Generating Station

Plan Proposes Collaborative Path Forward for Reduced Emissions, Continued Power Generation, and Clean Energy Development

[U.S. Dept. of Interior, July 26] Washington, D.C. – The Department of the Interior today announced it is part of an agreement reached that will allow for the continued delivery of electricity from the Navajo Generating Station (NGS) in Arizona while achieving significant air pollution reductions. The Department of the Interior, Central Arizona Water Conservation District, Navajo Nation, Gila River Indian Community, Salt River Project,

Environmental Defense Fund, and Western Resource Advocates have signed the agreement. The agreement, containing a proposed "Reasonable Progress Alternative to BART," was submitted to the U.S. Environmental Protection Agency (EPA) today for consideration in developing the final Best Available Retrofit Technology (BART) rule for NGS. "This consensus agreement among a very diverse group of interested parties is nothing short of historic," said Assistant Secretary for Water and Science Anne Castle. "Through collaboration and cooperation, this innovative proposal will not only significantly reduce harmful emissions, it will also mitigate the plant's carbon footprint and ensure continued generation of electricity that helps power the local economy." NGS is the largest coal-fired power plant in the West and it is also one the largest single sources of nitrogen oxide air pollution in the country, contributing to ozone and fine particle pollution in the region, which includes the Grand Canyon and ten other national parks and wilderness areas. The NGS is also significant because it provides over 90 percent of the power for the Central Arizona Project (CAP), the state's primary water delivery system, and plays a critical role in numerous tribal economies. In February 2013, in order to meet Clean Air Act legal mandates, the EPA issued a proposed BART rule for NGS that would require the installation of Selective Catalytic Reduction technology on each of the three NGS units between 2021 and 2023 to reduce nitrogen oxide emissions that impact the environment, including the clarity of scenic views in wilderness areas and national parks. In recognition of the important role the NGS plays in the regional economy, the EPA invited the submission of alternative proposals that would achieve the same or greater benefits. In response, a Technical Working Group consisting of NGS owners, the Interior Department, affected tribes and other interested parties came together to develop a supplemental proposal. The group worked to address the concerns of many diverse interests in the plant and to provide the best path forward for all parties, in a manner that reflects current and future economic and environmental considerations. Under the agreement, emissions of nitrogen oxide and carbon dioxide will be significantly reduced while also maintaining essential operations at NGS for the foreseeable future.

Lowering Water Levels on Colorado River Could Have Big Real Estate Impact in Arizona, Other States

[Phoenix Business Journal, July 15] In most cases, properties in close proximity to river fronts only enhance their values and subsequently the surrounding economies. But what would happen if the water flow was facing chronic drought and overuse, threatened to be eventually slowed to a trickle? That's become a major point of concern for the Colorado River, which federal authorities project faces a 10 to 30 percent reduction in its water by 2050 and was also named the nation's No. 1 "most endangered" river by advocacy group American Rivers in April. That could have widespread negative implications for communities such as Sedona, Aspen, Colo., Grand County, Colo. and Farmington, N.M., according to a recent survey by Protect the Flows, a coalition of more than 850 businesses that depend on the health of the Colorado River. The Colorado River itself does not run through Sedona, but the Oak Creek Canyon river — a tributary of the Gila River, one of the Colorado River's primary tributaries — does.

Maricopa Superior Court: Trash Burning Not a Renewable Resource

Utility can't use incineration to meet mandate, judge says

[Az Daily Star, July 18] PHOENIX - Arizona utilities can't use electricity generated by burning trash to meet their renewable energy requirements, a judge ruled Wednesday. Maricopa County Superior Court Judge Crane McClennen rejected the Arizona Corporation Commission's arguments that it is entitled to consider power from incinerators burning waste to be the same as solar, wind and geothermal energy. The judge said that's not what the commission's own rules state. Wednesday's ruling most immediately affects plans by the Mohave Electric Cooperative to meet part of its renewable energy mandate through power generated from a proposed plant near Surprise. But unless overturned it also slams the door on any other utility trying the same thing. McClennen's action, however, does appear to leave the door open for the utility regulators to amend their own rules to specifically include trash burning as a renewable resource. But Sandy Bahr, director of the Grand Canyon Chapter of the Sierra Club, which filed the lawsuit, said that would require the commissioners to make a conscious - and public - declaration that they consider trash burning environmentally advantageous.

Net Metering Key to Arizona, Other States' Solar Growth

[Phoenix Business Journal, July 29] Environment Arizona this week released a report that found Arizona is No. 1 when it comes to the amount of solar power installed based on population. All that could change though. It depends on where the Arizona Corporation Commission takes the discussion on net metering. The study was pretty detailed in what it had to say about the success of solar in states. For instance, 11 of the 12

in the top group had net metering policies, and the same number had a renewable energy standard. Arizona has both. Its net metering standard requires utilities to pay solar owners who supply excess power generation from those systems to the general power grid. It also requires utilities to get 15 percent of its power from renewable resources by 2025. The state is unique in that it has a third component that makes it beneficial for rooftop solar with 30 percent of the utility requirements for renewable energy meant to come from rooftop systems. It was a move designed by the ACC to spread solar around and not just give it to the utilities. Bret Fanshaw, state advocate for Environment Arizona, said the study was underway before the state began looking at its net metering policies. The solar industry and the utilities have a slight disagreement — if you call dueling public relations campaigns slight — about what, if any, changes need to made to the net metering policy. http://www.bizjournals.com/phoenix/news/2013/07/11/aps-to-bring-two-net-metering-plans-to.html?page=all

Official Cites Arizona's Water Management as Model for Colorado River

[Az Capitol Times, July 18] WASHINGTON – The director of the Arizona Municipal Water Users Association told a Senate subcommittee Tuesday that there is no "silver bullet" to the problem of rising demand for water from the Colorado River. Kathleen Ferris pointed to Arizona's years of successful water management policies that have kept water use at virtually the same level since 1957, despite an exploding population. But while conservation and reuse are essential, Ferris said other measures need to be taken, such as the augmentation of supplies. "We have to expand our thinking," Ferris told a subcommittee of the Senate Energy and Natural Resources Committee. She was one of several government, tribal and expert witnesses who appeared before the Subcommittee on Water and Power to discuss the Bureau of Reclamation's December on water supply and demand in the Colorado River Basin. That study laid out challenges for the river, which provides drinking water to nearly 40 million people, generates 4,200 megawatts of hydropower, delivers water for farm irrigation and provides recreational opportunities that help drive tourism in the region.

Paramount Solar Launches Proprietary Fund to Provide Affordable Solar Financing in California and Arizona

Paramount Solar®, a division of Paramount Equity®, based in Roseville, California, and U.S. Bank have partnered to create a renewable energy fund, the Paramount Energy Fund, that will finance approximately 1,600 residential solar systems. With this fund, Paramount Solar will provide homeowners with a fully-integrated solar offering, from financing through installation.

Paramount Energy Fund Will Support Company Growth and Expansion Plans

[PR Web, July 16] Paramount Solar®, a division of Paramount Equity®, based in Roseville, California, and U.S. Bank have partnered to create a renewable energy fund, the Paramount Energy Fund, that will finance approximately 1,600 residential solar systems. With this fund, Paramount Solar will provide homeowners with a fully-integrated solar offering, from financing through installation. Paramount Solar originates more than 500 residential solar systems per month, and more than 6,000 families have gone solar with the company since 2009. Paramount Solar has cultivated a strong customer base while refining their superior marketing systems throughout the past four years, utilizing multiple financing platforms from third-party financers. In 2013, the company, now reaching critical mass, is expanding into proprietary financing options.

Potential for Carbon Dioxide Sequestration in the Luke and Higley Basins, South-Central Arizona

[Az Geological Survey, July 10] TUCSON – New Environmental Protection Agency (EPA) rules to reduce carbon dioxide emissions at coal fired power plants are now driving studies of sedimentary basins in Arizona for their carbon sequestration potential. Two new reports from the Arizona Geological Survey describe the suitability of the Luke and Higley Basins of Maricopa County in south-central Arizona for sequestering carbon dioxide. A viable geologic repository for sequestering carbon dioxide must meet three conditions. First, it must host a substantial volume of porous and permeable rock or sediment at a depth of more than 800 meters (2,625 feet); a depth sufficient to maintain carbon dioxide in a supercritical state where it behaves more like a liquid than a gas. Second, the repository must host saline groundwater - to prevent contamination of fresh water aquifers. Third, it must be capped by a continuous impermeable layer of clay, salt or some other coherent and impermeable material, to prevent carbon dioxide from migrating to Earth's surface and escaping. The Higley and Luke Basins of Maricopa County in Arizona's Basin and Range Province possess the requisite sedimentary basin-fill volume, depth to bedrock, well control, and overall size to warrant study as a potential geologic repositories for carbon dioxide. Data from deep wells– 48 wells in the Luke Basin and 21 wells in the Higley Basin, complemented by gravity and geophysical data, were used to characterize each

basin's suitability for carbon-dioxide sequestration.

Potential Targets for Shale-Oil and Shale-Gas Exploration in Arizona

[Az Geological Survey, July 16] TUCSON – Innovations in horizontal drilling and hydraulic fracturing have dramatically increased oil and gas production from previously marginal shale-oil and shale-gas deposits leading to renewed interest in the potential for shale-oil and shale-gas exploration in Arizona. In a new **9-page report,** Arizona Geological Survey geoscientists Steve Rauzi (AZGS's Oil and Gas Administrator) and Jon Spencer (Senior Geologist) identify ten shale or slatey rock formations as potential targets for shale-oil and shale-gas exploration in Arizona. The authors characterize what is known about each formation - the location, distribution, organic carbon content, thickness, and the availability of geochemical analyses, detailed stratigraphy, and drilling history. Citations of relevant scientific literature bearing additional information are also included. The ten shale or shaley formations are distributed widely throughout Arizona, from the southeast through central and west-central Arizona, to the northwest, north-central, and northeastern-most Arizona; the illustration below provides the names and footprints of the ten formations. Rock formation ages range greatly from the 1,300 million year old (Myr) Pioneer Shale of central Arizona to Black Mesa's 90 Myr Mancos Shale. Over the past decade, oil and gas production in Arizona was largely confined to the Dineh-bi-Keyah and Black Rock fields on the Navajo Reservation. New exploration and production technologies could change that by bringing organic-rich shale deposits into play

SRP May Cut Output at Coal Plant

[Az Republic, June 26] Operators of the West's largest coal-fired power plant, a major economic engine for Arizona, propose closing one of its three 750-megawatt generators by 2020 to satisfy federal regulators and clear haze over the Grand Canyon and other national parks. Salt River Project and its partners in the Navajo Generating Station near Page — including the U.S. Interior Department and the Central Arizona Project — would also stop burning "conventional" coal by 2044, though new "clean coal" technology could allow continued use of the fuel beyond that date. The plan, the result of months of private negotiations, is intended to counter an Environmental Protection Agency proposal to mandate the use of costly nitrogen oxide-reducing catalytic converters to cut emissions at the plant, which helps power much of the Southwest and pumps Colorado River water to metro Phoenix and Tucson. The Navajo Nation, Gila River Indian Community, Western Resource Advocates and Environmental Defense Fund signed on to the proposal. Now, all that's needed is EPA approval. Regional EPA officials said they had not seen the proposal and could not comment other than to say they had encouraged the plant operators to come forward with their own ideas to address the environmental issues. The plan still carries costs for Arizonans — not least of which would be water-rate increases as power to pump Colorado River water gets pricier — but it delays the biggest bite until 2030, by which time coal's outlook is itself hazy. The EPA had proposed Selective Catalytic Reduction on all three units within 10 years, which SRP estimated would cost at least $500 million and possibly double that amount. Those costs were enough to raise the prospect that the owners could close the plant.

TEP to Buy Power from Wind Farm near Willcox, 1st of Its Kind in Area

[Arizona Daily Star, July 19] Tucson Electric Power Co. has won state approval to buy power from a planned wind energy farm near Willcox that would be the first utility-scale project of its kind in Southern Arizona. The Arizona Corporation Commission approved the 20-year power purchase agreement between TEP and Red Horse Wind 2 LLC, which was formed by Houston-based Torch Renewable Energy to build and manage the 220-acre project. Construction is expected to start later this year, pending environmental studies, and the farm is expected to go online in 2014.

ALTERNATIVE ENERGY AND EFFICIENCY

ManpowerGroup Retro-Commissions its Headquarters, Saves $105,000/year

[Energy Manager Today, July 15] ManpowerGroup's six-year-old LEED-Gold headquarters in Milwaukee, Wis., cut its annual utility costs by $105,000 by using Johnson Controls' retro-commissioning process. The project paid for itself in 12 months by adjusting the building equipment and its operations to meet current conditions. Although the building is LEED-Gold certified, Johnson Controls says there is a misconception that if you build a new, efficient building, it remains efficient for life, when in fact it needs to be constantly fine-tuned to perform at its best. The retro-commissioning process addresses changes that have developed throughout the building's life. Using information collected from the Metasys building management system, the

Johnson Controls' Service team identified 12 possible facility improvement measures at ManpowerGroup. Four were chosen for their high potential to reduce energy and stimulate a fast payback. Upgrades included revising building system schedules to operate more efficiently, switching HVAC units from electric to natural gas, and centralizing the control of the air distribution system. Once the savings were verified, ManpowerGroup received $25,000 from Focus on Energy, a Wisconsin-based organization funded by investor-owned energy utilities. The organization offers incentives to implement energy-efficiency projects.

US Reaches Milestone of 10 Gigawatt Solar Photovoltaic Capacity, According to NPD Solarbuzz

[Solarbuzz.com, July 9] Santa Clara, CA **–** Solar photovoltaic (PV) installations in the US have now broken through the 10 gigawatt (GW) barrier, following strong market deployment since the start of 2010. During the first half of 2013, more than 1.8 GW of new solar PV capacity was installed in the US, according to the NPD Solarbuzz *North America PV Market Quarterly* report. "The US has now joined an elite group of maturing solar PV markets that have accumulated more than 10 GW of installed capacity," commented Christopher Sunsong, analyst at NPD Solarbuzz. "Only Germany, Italy, and China have more installed PV capacity than the US. The US is only the fourth country to reach the 10 GW milestone of installed PV capacity." Solar PV has been one of the fastest growing energy sources in the US over the past six years, with a compound annual growth rate of over 50% since 2007. Cumulative solar PV installations are forecast to increase an additional 80% over the next 18 months, surpassing 17 GW by the end of 2014.

Xcel, Interior Department Add Almost 2 Gigawatts of Wind Power

[GreenBiz.com, July 26] For nine years, Xcel has been the leading utility for wind power and it's about to acquire a lot more. It's buying 600 megawatts (MW) of wind energy from two planned wind farms in Minnesota and North Dakota and taking ownership of another being built in Minnesota by RES Americas Development. The deal increases the utility's wind portfolio in the Upper Midwest by a solid third, its single largest increase there. When they come online by 2015, 180,000 more homes will be powered by wind. Xcel gets energy from 50 wind projects in Minnesota, both large and small, adding up to 1,800 MW for the region. Minnesota is spending $1 billion to upgrade its transmission system this year as part of a $2.2 billion overhaul, enabling a lot more wind power to connect to the grid. Wind prices are so competitively priced right now that Xcel expects customers to save $180 million compared to conventional power plants.

ENERGY/GENERAL

Global Electric Power Use To Increase 56 Percent by 2040

[EL&P, July 25] Worldwide energy use will climb about 56 percent by 2040, according to the U.S. Energy Information Administration's International Energy Outlook 2013. Electrification of the developing world and the growth of China will be the two largest contributors to this increase, according to the EIA report. World net power generation is expected to increase by 93 percent by 2040, increasing from 20.2 trillion kWh in 2010 to 39 trillion kWh in 2040. Renewable energy sources will be the fastest growing sources of electricity generation, increasing by 2.8 percent per year from 2010 to 2040. Natural gas and nuclear power are expected to be second-fastest growing sources of generation, increasing by 2.5 percent per year, according to Power Engineering.

Natural Gas Dominates New Capacity; Renewables Close Behind

[Fierce Energy, July 23] In the first half of 2013, renewable energy sources, including biomass, geothermal, solar, water, and wind, accounted for 24.93 percent of all new domestic electrical generating capacity -- a total of 2,144 MW -- according to the Federal Energy Regulatory Commission's (FERC) Office of Energy Projects. Renewable energy sources continue their rapid growth in the nation's electrical generation mix, outpacing traditional sources such as coal, oil, and nuclear power. Only natural gas dominated in the first six months of 2013, with 4,852 MW, or 56.41 percent, of new capacity. Among renewable energy, solar led the first half of 2013 with 94 units totaling 979 MW. Wind followed solar with 8 units totaling 959 MW. Biomass added 36 new units totaling 116 MW while water had 8 new units with an installed capacity of 76 MW and geothermal steam had one new unit at 14 MW

INDUSTRIES AND TECHNOLOGIES

Cool Energy Wins DOE Grant

[Electric Light & Power, July 29] Cool Energy, Inc., a clean energy power generation company with headquarters in Boulder, Colorado, won a $1 million Phase II Small Business Innovation Research grant from the U.S. Department of Energy (DOE). This power generation technology this grant supports could replace up to 300 fossil fuel power plants, according to the company. The grant will support a program to demonstrate electricity generation from untapped heat from distributed geothermal sources. The grant will allow Cool Energy to build and test their first 20 kW prototype Stirling engine, the GeoHeart Engine, to generate electricity from co-produced liquids at oil and gas wells. The recoverable heat in these liquids is currently wasted, as is the potentially valuable heat from pumps and compressors, as well as geothermal heat from non-producing wells.

New Hydrogen-Making Method Could Give a Boost to Fuel-Cell Vehicles

The chemical company BASF has found a greener way to make hydrogen, reviving hopes for fuel-cell vehicles.

[MIT Tech Review, July 23] The carbon emissions involved in making hydrogen make fuel-cell vehicles worse for climate change than hybrids. Hydrogen-powered vehicles have been pitched as a greener alternative to gas-powered vehicles, but one problem with this is that the hydrogen is typically produced from a fossil fuel—natural gas—in a process that releases a lot of carbon dioxide. BASF, the world's largest chemical company, may have a solution. It's developing a process that could cut those emissions in half, making hydrogen fuel-cell vehicles significantly cleaner than electric vehicles in most locations (the environmental benefits of electric cars vary depending on how the electricity is generated). Beyond providing a cleaner source of hydrogen for fuel-cell vehicles, the process could also help clean up industrial processes, like oil refining, that use large amounts of hydrogen. BASF is working on a pilot plant to demonstrate the technology as part of a $30 million project partially financed by the German government. A second part of the project will demonstrate a new way to use carbon dioxide emissions as a raw material for chemicals and fuels, by combining them with the hydrogen produced in BASF's low-carbon emissions process. Taken together, the systems could create new markets for natural gas, especially in the United States, where fracking has led to a boom in production. A cleaner form of hydrogen could also revive stronger interest in fuel-cell vehicles. A handful of automakers have plans to start selling fuel-cell vehicles as early as 2015 (see "Why Toyota and GM Are Pushing Fuel-Cell Cars to Market"). Conventional hydrogen production involves reacting methane—the main ingredient of natural gas—with oxygen or water. This reaction produces hydrogen gas and, as the carbon reacts with oxygen, carbon dioxide.

Geothermal System at Colorado State Capitol Being Brought On Line

[Denver Post, July 17] The new geothermal heating and cooling system at the Colorado state Capitol, consisting of water pumped from two wells drilled into the Arapahoe Aquifer more than 850 feet underground, is being brought on line this week and should bring hefty savings on utility bills for the Capitol, officials said Wednesday. The water from the aquifer is a consistent 65 degrees. The open-loop geothermal system will save an estimated $100,000 in heating and cooling costs in the first year. The savings should escalate each following year by 3 percent. The state Capitol, opened in 1894, is the first state capitol to use a geothermal system to both heat and cool the building. Idaho's Capitol building is heated from an active geothermal hot springs.

Solar Industry Looks at Storage

[Energy Prospects West, July 23] Energy storage paired with solar is likely to be deployed more quickly in California's commercial sector than in its residential sector, executives said at the Intersolar North America conference earlier this month in San Francisco. The U.S. market for energy storage is forecast to exceed $5 billion in 2014, up from about $2 billion in 2011, according to estimates from the Climate Change Business Journal. And Navigant Energy forecasts annual revenue from energy-storage systems in commercial buildings alone will grow to more than $7.5 billion in 2022. That has the solar industry, which is looking for new growth, paying attention. A worldwide glut of solar panels led to dramatic price declines that were good for consumers, but not so good for manufacturers. Global growth in the solar-photovoltaic industry to a large extent has been driven by feed-in tariffs, said Markus Hoehner, CEO of Hoehner Research & Consulting Group, but those tariffs are being greatly reduced.

LEGISLATION AND REGULATION

EPA Debuts Upgraded Energy Star Portfolio Manager Benchmarking Tool

[U.S. Environmental Protection Agency, July 18] WASHINGTON — The U.S. Environmental Protection Agency (EPA) today announced the release of an upgrade to its popular online energy management and tracking tool, Energy Star Portfolio Manager. The upgraded tool can help businesses achieve the President's call to make commercial buildings at least 20 percent more energy efficient by 2020. The new Energy Star Portfolio Manager delivers a more user-friendly interface, enhanced data sharing capabilities, better reporting, and for the first time, the ability to manage buildings across their lifecycle from design through occupancy. Tens of thousands of organizations—including school districts, retail chains, hospital systems, and local governments—currently use Energy Star Portfolio Manager to measure the energy performance, water use, utility costs, and greenhouse gas emissions of more than 40 percent of the nation's commercial building space.

EU Prosun Takes Legal Action Over Solar Trade Deal

[PV-Tech.org, July 29] The main protagonist behind the European Commission's investigation into the dumping of Chinese-manufactured solar products in Europe, EU ProSun, has initiated legal proceedings over the recent trade agreement. The coalition of European PV manufacturers filed a lawsuit in Luxemburg against the proposed measures agreed under the terms of the agreement on Monday. The group believes that the reported minimum import price and market cap violates the Basic Anti-dumping Regulation, Regulation 1225/2009 – which states that a suspension of anti-dumping duties through a price undertaking is permitted only if the minimum price is adequate to remove the injury caused by the dumping to the European industry. Milan Nitzschke, president of EU ProSun commented: "This is essentially a guarantee of sales at that level and more for China and an authorization to sell at dumped prices. That is a clear violation of EU trade law." He added: "In these negotiations, the EU Commission obviously acted against their overall mission and did not represent the interests of the European industry. It appears rather that there was only a desire to bring the proceedings to a quick end. Throughout the negotiations, China appears to have blackmailed and mocked the EU." EU ProSun also believes that the decision to phase in duties through June to August also violated anti-dumping legislation.

Energy Efficiency Programs On the Grow

[Electric Light & Power, July 25] Regulatory support for energy efficiency program continues to expand, according to a new report by IEE. Through such regulatory frameworks, the electric power industry can provide integrated programs that help customers manage their energy use, more fully deploy demand response resources and serve as a point of contact to support customer energy needs. "Supportive regulatory frameworks are the key to expanding the electric power industry's already large commitment to electric efficiency even further," said Lisa Wood, IEE executive director. Spending and budgets for electric utility company energy efficiency programs continue to grow, due in large part to the evolution of state policies that allow utilities to pursue efficiency as a sustainable business. In fact, utility company energy efficiency budgets in 2012 totaled $6.9 billion — a 27 percent increase above 2010 levels. By 2025, IEE predicts that energy efficiency budgets will exceed $14 billion.

FERC Orders $453 Million in Penalties for Western Power Market Manipulation

[NASEO website, July 24] The Federal Energy Regulatory Commission has ordered Barclays Bank PLC to pay $453 million in fines for manipulating the western markets between 2006 and 2008. Barclays has 30 days to submit payment to the U.S. Treasury. The penalties will be distributed to the Low-Income Home Energy Assistance Programs of Arizona (19%), California (63%), Oregon (9%), and Washington (9%).

On Rooftops, a Rival for Utilities

[New York Times, July 26] For years, power companies have watched warily as solar panels have sprouted across the nation's rooftops. Now, in almost panicked tones, they are fighting hard to slow the spread. Alarmed by what they say has become an existential threat to their business, utility companies are moving to roll back government incentives aimed at promoting solar energy and other renewable sources of power. At stake, the companies say, is nothing less than the future of the American electricity industry. According to the Energy Information Administration, rooftop solar electricity — the economics of which often depend on government incentives and mandates — accounts for less than a quarter of 1 percent of the nation's power generation. And yet, to hear executives tell it, such power sources could ultimately threaten traditional utilities'

ability to maintain the nation's grid. We did not get in front of this disruption," Clark Gellings, a fellow at the Electric Power Research Institute, a nonprofit arm of the industry, said during a panel discussion at the annual utility convention last month. "It may be too late." Advocates of renewable energy — not least solar industry executives who stand to get rich from the transformation — say such statements are wildly overblown. For now, they say, the government needs to help make the economics of renewable power work for ordinary Americans. Without incentives, the young industry might wither — and with it, their own potential profits. The battle is playing out among energy executives, lawmakers and regulators across the country. In Arizona, for example, the country's second-largest solar market, the state's largest utility is pressuring the Arizona Corporation Commission, which sets utility rates, to reconsider a generous residential credit and impose new fees on customers, months after the agency eliminated a commercial solar incentive. In North Carolina, Duke Energy is pushing to institute a new set of charges for solar customers as well. Nowhere, though, is the battle more heated than in California, home to the nation's largest solar market and some of the most aggressive subsidies. The outcome has the potential to set the course for solar and other renewable energies for decades to come. At the heart of the fight is a credit system called net metering, which pays residential and commercial customers for excess renewable energy they sell back to utilities. Currently, 43 states, the District of Columbia and 4 territories offer a form of the incentive, according to the Energy Department. Some keep the credit in line with the wholesale prices that utilities pay large power producers, which can be a few cents a kilowatt-hour. But in California, those payments are among the most generous because they are tied to the daytime retail rates customers pay for electricity, which include utility costs for maintaining the grid.

Smart Grid Advancement Act introduced in U.S. House

[Electric Light & Power, July 15] Representative Jerry McNerney (D-Stockton) introduced the Smart Grid Advancement Act July 14 in the U.S. House of Representatives. McNerney, a Californian, sits on the U.S. House Committee on Energy and Commerce. Citing a recent Department of Energy (DOE) report that found that investment in smart grid technology has resulted in nearly $7 billion in economic output and the creation of 47,000 jobs, McNerney said his smart grid bill (also known as H.R. 2685) is needed to better use the country's energy resources. "If we take action now, smart grid will create family-wage jobs, produce real economic benefits, increase energy efficiency, and allow for renewable energy technologies to be more easily integrated into our system," McNerney said. The act would task states and utilities with establishing goals for reducing energy use during times of peak demand with the use of smart grid technologies.

WESTERN POWER

75% Of California Rooftop PV Systems Now Leased

[PV-Tech.org, July 29] Three in four California residential rooftop PV plants are now leased, as opposed to purchased and installed by the resident, according to a study by global think-tank Climate Performance Initiative (CPI). The study also claims that leased systems do not cost federal taxpayers more money than other solar power plants and that there is "no reason to prohibit solar leasing", as some US states currently do. Under various schemes, including the California Solar Initiative, individuals and companies to receive cash rebates for electricity provided to the grid from PV systems that are owned outright. In the case of leased systems, residents of buildings with rooftop PV installed pay a third party leasing company to provide and install the system as well as taking responsibility for maintenance. The appeal for a householder of leasing a rooftop PV system is the simplicity of becoming involved in solar power generation, saving money on energy bills, without facing the immediate capital outlay associated with installing and running a system by themselves. The benefits to a lease company include receiving a 30% tax credit as well as receiving Renewable Energy Credits (REC) against the amount of electricity generated and carbon dioxide offset. According to the CPI study, the number of leased rooftop PV installations in California grew from 10% in 2007 to 56% in 2011, jumping to 75% in 2012. At present leasing is only allowed in a handful of US states, with Georgia and South Carolina among those currently considering its introduction.

BLM Holds 66,000 Acres of Nevada for Solar Development

[Pahrump Valley Times, July 17] As part of President Obama's plan to reduce carbon pollution and promote American-made clean energy sources, the Bureau of Land Management (BLM) announced the withdrawal of lands identified for solar energy development in the West from new mining claims. The BLM published a Federal Register notice July 5 announcing the approval of a Public Land Order that withdraws 303,900 acres of land within 17 Solar Energy Zones in six western states from the location of mining claims that could

impede development of solar energy sites. The lands had already been segregated from the mining laws under temporary measures. The Public Land Order extends the withdrawal for 20 years. The Department of the Interior established the Solar Energy Zones in October 2012 as part of a western solar plan that provides a road map for utility-scale solar energy development on lands managed by the BLM in Arizona, California, Colorado, Nevada, New Mexico, and Utah. The land order encompasses a total of 65,946 acres in what the Bureau of Land Management calls the Mt. Diablo Meridian. There are 9,690 acres being withdrawn in Amargosa Valley; 4,810 acres in Gold Point, which is about 30 miles northwest of Beatty; and 16,560 acres in Millers, 12 miles northwest of Tonopah. Two other parcels outside Nye County include 6,160 acres in Dry Lake, 20 miles northeast of Fallon and 28,726 acres in Dry Lake Valley, located 20 miles north of Lake Tahoe.

Iberdrola Plans Massive Wind Project in New Mexico

[Energy Prospects West, July 23] Iberdrola Renewables plans to build the 1,000-MW El Cabo wind project on private and state land in central New Mexico, company spokesman Paul Copleman said July 11. Copleman confirmed that Iberdrola asked the New Mexico State Land Office to conduct an auction for a 45-year lease of 39,000 acres in Torrance, San Miguel and Santa Fe counties. In response to Iberdrola's request, the State Land Office on July 1, 2013, announced that an auction of the land lease will be held on Sept. 19, 2013, in Estancia, N.M. Competitors may bid for the state's land, but the State Land Office will only accept bids for all 39,000 acres and will reject any offers for portions of the lease package.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here.

Income Tax Credit Provisions

An investor seeking an income tax credit must document to the ACA the investment was made in either a qualified rural or bioscience company or any other qualified small business. For a qualified bioscience or rural company, the tax credit may total up to 35% of the investment amount over three years; for any other qualified business, the tax credit may total up to 30% over three years. If the tax credits exceed the investor's income tax liability, any unused tax credit amount may be carried forward for up to three taxable years as long as the investor timely claims the credits with Revenue.

The ACA may authorize up to $20 million in tax credits to qualified investors beginning July 1, 2006 through June 30, 2016. The tax credits will be authorized on a first come, first served basis, which is established by the date and time the investor files an application with the ACA. Download the Angel Tax Credit Allocation Table Angel Tax Credit Allocation Table to view the remaining amount of tax credits available. For more detailed information please see below or direct questions to the Program Manager.

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona.

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000).

AZ Fast Grant - Technology Commercialization Assistance - ***Next round of grants opening in mid November. This*** competitive grant enables Arizona-based technology companies to initiate the commercialization process. The grant will pay up to $7,500 to provide one or more of the following professional consulting services:

- An expert review of the technology under development to determine if it already exists, is a good candidate for intellectual property protection and is likely to find an attractive market.
- A commercialization feasibility study to identify showstoppers to commercialization before resources are spent commercializing a technology that is unlikely to succeed.
- Other commercialization assistance such as training or preparation for the submission of a federal SBIR/STTR grant application or another acceptable means of technology commercialization.

AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets.

Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. For more detailed information please see below or direct questions to the Program Manager.

Healthy Forest - Harvesters, initial processors and transporters of small diameter timber, may receive: Transaction Privilege Tax Exemptions, Use Tax Exemption and New Job Income Tax Credits.

Job Training Program offers job specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round

Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round

Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue.

Quality Jobs Tax Credit Program - Beginning July 1, 2011, this new program provides Arizona income tax credits for companies creating new jobs and investing in Arizona. The credit is valued at up to $9,000 over a 3-year period per each new employee and offers a 5-year carry forward provision for any unused tax credits. Eligibility qualifications are different for rural and metro areas.

Bonds Administered by the Arizona Commerce Authority.

Federal Programs

- -

Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- **Sales Tax Exemption for Machinery and Equipment** - Exemptions are available for:
    1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
    2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
    3. Machinery or equipment used in research and development, see ARS 42-5159(B)(14).

Questions can be directed to Christie Comanita (602-716-6791).

- Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Database of State Incentives for Renewables and Efficiency (DSIRE)
    - Arizona Incentives/Policies
    - Federal Incentives/Policies
    - Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- Southern and Central Arizona Aerospace & Defense Region - 2013 Energy Reduction Challenge Grant Competition
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Solar, Heliospheric, and INterplanetary Environment – Response due August 21, 2013
- Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS) - Response due August 21, 2013
- Clean Energy Manufacturing Innovation Institute- Response due August, 29, 2013
- **NEW!** SBIR/STTR FY 2013 Phase II Release 3 – Response due September 4, 2013
- **NEW!** Advanced Manufacturing Technology Consortia (AMTech) Program – Optional Pre-applications should be received no later than Friday, September 6, 2013. Full applications must be received no later than 11:59 p.m. Eastern Time, Monday, October 21, 2013. Applications received after the deadline will not be reviewed or considered
- Water Sustainability and Climate - Responses due September 10,2013
- FY2013 Economic Development Assistance Programs – Response due quarterly; September 13, 2013
- **NEW!** Manufacturing Technology Acceleration Center (M-TAC) Pilot Projects – Response due by September 23, 2013.
- Bio-refinery Assistance Program – Response due October 31, 2013
- Energy, Power, and Adaptive Systems – Response due November 1, 2013
- Electronics, Photonics, and magnetic Devices - Response due November 1, 2013
- SunShot Initiative - Responses due November 20, 2014
- Solid Waste Management Grant - Response due December 31, 2013
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014

- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2013

- Algal Culture Management and Strain Selection Workshop
  August 19-20, 2013 The University of Texas at Austin Austin, TX

- 2013 Tribal Lands and Environment Forum
  August 19-22, 2013 Santa Ana Pueblo, NM

- Waste Conversion Technology Conference & Trade Show,
  September 15-17, 2013 San Diego, CA

- NASEO 2013 Annual Meeting
  September 15-18 Denver, CO

- 2013 SolarPACES
  September 17-20, 2013 Las Vegas, NV

- **NEW!** Energy Environment & Building Conference
  September 24-26, 2013 Phoenix, AZ

- GEA Geothermal Energy Expo 2013
  September 29-October 2 Las Vegas, NV

- **NEW!** Green Fleet Conference & Expo
  October 1-2 Phoenix, AZ

- **NEW!** Arizona Governor's Economic Development Conference
  October 2-4 Flagstaff, AZ

- Solar Decathlon 2013
  Oct. 3-13, 2013 Irvine, CA

- IGSHPA Conference & Expo
  October 9-10, 2013 Las Vegas, NV

- **NEW!** Solar Power International
  October 21-24 Chicago, IL

- **NEW!** Border Energy Forum XX
  November 6-9 San Antonio, TX

- AWEA Wind Energy Fall Symposium
  November 6-8 Colorado Springs, CO

- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA

- Ecobuild America 2013
  December 9-13 Washington, D.C.

2014

- **NEW!** Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ

- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ